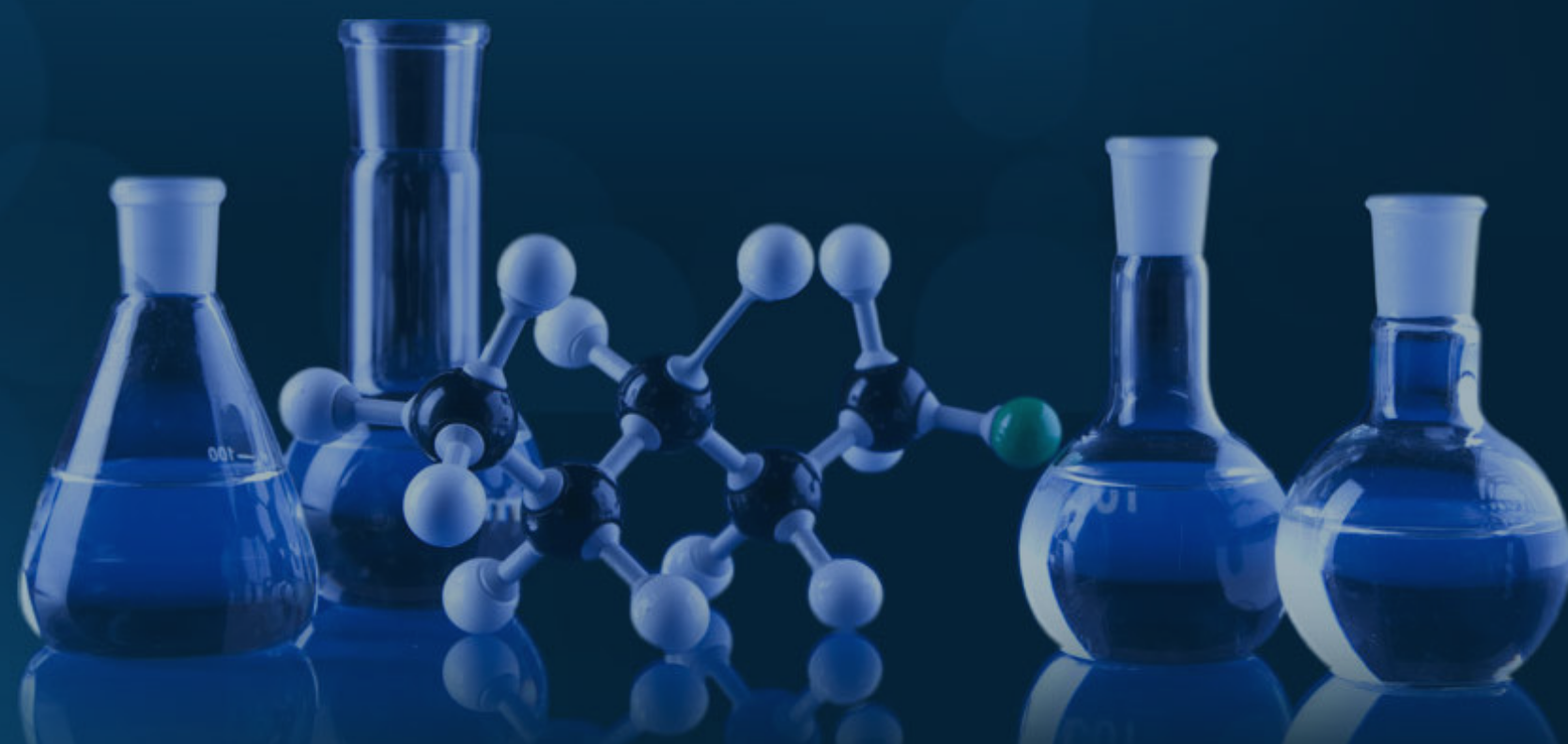




## ARL is an Authority on Nutrition and the Science of Balancing Body Chemistry Through Hair Tissue Mineral Analysis!

Hair Tissue Mineral Analysis

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## Toxic Metals – Hidden

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### Hidden Toxic Metals

We receive many inquiries as to why toxic metals are not revealed on the first or even second hair analyses, especially when one suspects the presence of toxic metals. Let us review several aspects of toxic metal metabolism.

#### Toxic Metal Absorption

Toxic metals may be acquired before or after birth. Before birth, any exposure of the mother may be passed on to the fetus. Toxicology books describe the fetus as a "sink" for toxic metals such as cadmium. After birth, sources of toxic metals include food, water or other ingested substances, the air we breathe or absorption through one's skin.

Once absorbed, the metals enter the bloodstream, as do all chemicals and nutrients. Three possibilities then exist:

1. Some toxic metals are excreted through the liver, kidneys, skin, hair and other elimination routes.
2. The body attempts to store what it cannot eliminate in places that will cause the least damage to the body. These include fatty tissues, joints, hair, skin and other sites.
3. Some toxic metals will replace vital minerals in tissues and enzyme binding sites. This may occur because the body is deficient in the vital minerals and the toxic metals become substitutes for them. Toxic metals chemically resemble vital minerals to some degree. For example, cadmium is listed directly under zinc in the periodic table of the elements. This means their structures are similar. Each toxic metal has target organs. For example, lead deposits mainly in the bones and brain. Cadmium deposits in the kidneys and periosteum, mercury in the kidneys and brain, and so forth. These metals become part of the actual structure of the tissue or enzyme.

#### Blood And Urine Tests

Some doctors use blood and urine tests to detect toxic metals. These tests are mainly useful to detect toxic metals in cases of acute poisoning and if the test is taken soon after the exposure. If the exposure is chronic - over a long period of time - or took place over a month before, these tests are less useful. Most toxic metals are removed from the blood within 20 days of an acute exposure to prevent more damage.

Blood and urine tests can be made more accurate if a chelating agent is given first and then the blood or urine sample collected. This is called a challenge test. It is more likely to detect toxic metals. However, chelating agents primarily capture toxic metals that are in the blood and the walls of the arteries. Therefore, this type of test will still not reveal toxic metals that are stored deep within body tissues.

#### Hair Analysis

The US Environmental Protection Agency, in a review of over 400 studies in 1979, found hair analysis to be a reliable indicator for the presence of many of the toxic metals. Hair gives a record of exposure over time and the metals are easy to detect and measure accurately in the hair tissue. **However, hair testing only reveals what is in the hair, not the entire body load.** The only way to measure the entire body load of a metal would be to biopsy every organ and tissue.

Hair is not a target tissue for toxic metals, but it is a tissue used by the body to eliminate toxic metals. Reasons why toxic metals may not be revealed in the hair include:

- If the metabolic or oxidation rate is slow, the body has less ability to eliminate toxic metals. They remain sequestered in other tissues and organs and will not show up in the hair. For this reason, those with a faster rate of metabolism, or fast oxidizers, often have higher hair levels of toxic metals. They are not more toxic individuals, they just eliminate metals better.
- Often a nutritional balancing program is required to promote the elimination of the toxic metals. The dietary and supplement program not only enhances the oxidation rate, but provides toxic metal antagonists, chelating agents and enhances the activities of the eliminative organs of the body. These measures greatly assist the body in eliminating the toxic metals, causing them to be revealed on hair analysis tests as they are being eliminated. These programs support the biochemical balance of the body and are quite different from simply giving powerful chelating agents or other methods that may unbalance body chemistry.

Even with these measures, toxic metals stored deep within the tissues can take years before the body is able to eliminate them. For example, the author's mother smoked during his pregnancy and when he was a child. Cigarettes are a source of cadmium toxicity. However, it took about eight years on a nutritional balancing program before cadmium ever registered on his hair analyses. The same phenomenon can occur with mercury, copper and the other toxic metals.

#### What about Fasting And Elimination Diets?

Fasting and elimination diets are sometimes used to help remove toxic metals. Our experience is that they are often less effective than claimed. Many people who undergo months of these therapies still reveal high levels of toxic metals when they begin a nutritional balancing program.

These methods may be less effective for several reasons:

- Today, many individuals are so toxic and nutritionally deficient that fasting may only create more deficiencies and does not replace the vital nutrients.
- The eliminative organs are often sluggish and thus elimination of the toxic metals does not occur very well.
- Cleansing diets and fasts may not enhance the oxidation rate. Thus inadequate adaptive energy is available to eliminate the toxic metals.

However, short fasts and elimination regimens, along with enemas, sauna baths, skin brushing and other natural therapies may be useful if used in conjunction with a nutritional balancing program based on hair analysis. In our experience there are no simple shortcuts. Toxic metals can only be eliminated as fast as the body is able to do it safely. Several years are often required. Progress can be followed with repeat hair mineral tests.

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